

EXPLANATION OF PLATE VIII.

- Fig. 1. *Ennea callista*.
 Fig. 2. — *connollyi*.
 Fig. 3. — *crispula*.
 Fig. 4. — *eshovensisi*.
 Fig. 5. — *euschemon*.
 Fig. 6. — *eximia*, M. & P.
 Fig. 7. — *hypsoma*.
 Fig. 8. — *oppugnans*.
 Fig. 9. — *parallela*.
 Fig. 10. — *periploca*.
 Fig. 11. *Helicarion pumilio*.
 Fig. 12. — *russofulgens*.
 Fig. 13. *Natalina lightfootiana*.
 Fig. 14. *Zingis thermanum*.
 Figs. 15, 15 a. *Trachycystis connollyi*.
 Fig. 16. *Zingis arnotti*, Benson.

LVIII.—*Descriptions of Four new Frogs and a new Snake discovered by Mr. H. Sauter in Formosa.* By G. A. BOULENGER, F.R.S.

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Rana adenopleura.

Vomerine teeth in two small oblique groups between the choanæ. Head moderate, as long as broad; snout obtusely pointed, prominent, as long as the orbit; canthus rostralis obtuse; loreal region oblique, concave; nostril equally distant from the eye and from the end of the snout; inter-orbital region nearly as broad as the upper eyelid; tympanum very distinct, two-thirds to three-fourths the diameter of the eye. Fingers slender, with slightly swollen tips, first extending slightly beyond second; toes slender, half-webbed, the tips dilated into small but distinct disks; subarticular tubercles moderate; a small oval inner metatarsal tubercle and sometimes a rounded outer one at the base of the fourth toe. The tibio-tarsal articulation reaches the tip of the snout or between the eye and the tip of the snout. Skin smooth; a moderately broad, very prominent, dorso-lateral glandular fold. Greyish brown above, with or without darker spots and marblings, with or without a light vertebral line; a more or less distinct dark band on each side of the head, passing through the eye; a whitish streak along the upper lip; dorso-lateral fold dark-edged; limbs with dark cross-bars; hinder side of thighs yellowish, spotted or marbled with

brown or black; lower parts white, throat sometimes brownish. Male with an internal vocal sac on each side and a very large flat gland on each side of the body, above and behind the shoulder, as in *A. pleuraden*.

From snout to vent 55 mm.

Several specimens from Fuhacho village, altitude about 4000 feet.

Agrees very closely with *R. pleuraden*, Blgr., from Yunnan, but differs in the distinctly dilated tips of the toes.

Rana sauteri.

Vomerine teeth in two strong oblique series extending considerably beyond the level of the posterior border of the choanae. Head moderate, as long as broad; snout rounded, not prominent, as long as the eye; canthus rostralis obtuse; loreal region not very oblique, slightly concave; nostril a little nearer the end of the snout than the eye; interorbital region a little narrower than the upper eyelid; tympanum very distinct, two-thirds to three-fourths the diameter of the eye, narrowly separated from the latter. Fingers slender, with distinctly swollen tips, first and second equal or first extending very slightly beyond second; toes slender, three-fourths webbed, the tips dilated into small but distinct disks; subarticular tubercles large and prominent; a small oval inner metatarsal tubercle and a smaller round tubercle at the base of the fourth toe. The tibio-tarsal articulation reaches the tip of the snout or a little beyond. Skin smooth or finely shagreened above; a very narrow dorso-lateral glandular fold. Pale grey or greyish brown above, uniform or with small brown or black spots; a more or less distinct dark bar between the eyes; sometimes a dark ^ between the shoulders; a dark brown or black canthal streak and a large temporal spot of the same colour covering the tympanum; limbs with dark cross-bars; lower parts white, throat and breast closely spotted or marbled with grey or brown. Male unknown.

Total length 57 mm.

Five specimens from Kanshirei Village, altitude about 2000 feet.

But for the less oblique loreal region and the dilated toes, this species resembles strikingly *R. japonica*, Blgr. It is also allied to *R. mortenseni*, Blgr., which differs in a stouter habit, a much thicker and more prominent dorso-lateral fold, and in the lighter colour of the tympanum. *R. sauteri* furnishes another interesting link between the "*Rana temporaria*" and the "*Hylorana*."

Rhacophorus robustus.

Vomerine teeth in two strong oblique series between the choanæ, narrowly separated from each other and nearly touching the inner front edge of the latter. Head rather large, not much depressed, as long as broad; snout rounded or subacuminate, slightly projecting beyond the lower jaw; canthus rostralis obtuse, loreal region concave; nostril equally distant from the eye and the end of the snout; interorbital space narrower than the upper eyelid; tympanum moderately distinct, about half the diameter of the eye. Fingers moderately long, with a rudiment of web, the disks as large as the tympanum. Toes moderate, entirely or nearly entirely webbed, the disks a little smaller than those of the fingers; inner metatarsal tubercle small, oval, moderately prominent. The tibio-tarsal articulation reaches the eye or the nostril; tibia about half as long as head and body. Skin smooth or shagreened above, granular on the sides, on the belly, and under the thighs; a strong oblique glandular fold from the eye to the shoulder. Greyish or brownish above, uniform or with darker variegations, sometimes with scattered white dots; a more or less distinct dark area between the eyes, sharply defined in front; limbs with or without dark cross-bars; groin and sides of thighs with dark marblings, or marbled with blackish, or black with yellow spots; lower parts white. Male with an internal vocal sac.

Total length 75 mm.

Several specimens from Kankau (sea-level), Alikang (about 3000 feet), and Kosempo (about 5000 feet).

Closely allied to *R. buergeri*, Schleg., but distinguished by the presence of a rudiment of web between the fingers.

Microhyla steinegeri.

Habit rather stout. Snout truncate, a little shorter than the orbit, projecting beyond the mouth; interorbital space much broader than the upper eyelid; choanæ very large, no ridge between them. Fingers and toes moderately slender, blunt, not dilated into disks; first finger a little shorter than second; subarticular and palmar tubercles very strong; a rounded inner metatarsal tubercle; a very slight rudiment of web between the toes. Tibio-tarsal articulation reaching the temple; tibia not half the length of head and body. Skin smooth; an oblique fold from the eye to the arm. Dark grey, spotted or freckled with black; sides of head and limbs with lichen-like light variegations; a black streak from the end of the snout to the fore limb, passing through the eye;

lower parts dirty white, more or less dotted or spotted with brown. Male with an internal vocal sac and the throat black.

Total length 30 mm.

Five specimens from Kanshirei.

This very distinct species is named after Dr. L. Stejneger, the author of a valuable monograph of the Reptiles and Batrachians of Japan and adjacent territories.

Other Batrachians included in Mr. Sauter's collection are *Rana kuhlii*, D. & B. (Fuhosho, Kanshirei, Alikang), with which, I think, Stejneger's *R. namiyei*, from Okinawa, should be united, *R. latouchii*, Blgr. (Fuhosho), *R. swinhonis*, Blgr. (Kosempo), *Rhacophorus japonicus*, Mallow. (*Rana macropus*, Blgr.) (Kankau), *R. ciffingeri*, Bœttg. (Kanshirei), *R. moltrrechtii*, Blgr. (Kosempo), and *Microhyla fissipes*, Blgr. (Kosempo and Kanshirei).

Tropidonotus sauteri.

Maxillary teeth 23, posterior feebly enlarged. Head small. Eye moderate. Rostral broader than deep, just visible from above; internasals as long as broad, shorter than the prefrontals; frontal once and a half as long as broad, a little longer than its distance from the end of the snout, much shorter than the parietals; loreal as long as deep; one præ- and three postoculars; temporals 1 + 1 or 1 + 2; seven upper labials, third and fourth entering the eye; four lower labials in contact with the anterior chin-shields, which are much shorter than the posterior. Scales strongly keeled, of outer row smooth or feebly keeled, in 17 rows. Ventrals 125-130; anal divided; subcaudals 78. Dark grey-brown above, with small black spots, with a rather ill-defined reddish-brown streak on each side of the back, bearing, on the anterior part of the body, a series of distant small whitish spots; upper surface of head with black vermiculation; an oblique whitish streak across each side of the nape; upper lip spotted black and white; lower parts yellowish white, with a black spot near the outer end of each ventral, these spots forming a strongly marked ventro-lateral series.

Two specimens, male (V. 125; C. 78) and female (V. 130; C. ?), from Kosempo.

Allied to *T. swinhonis*, Gthr.

Other snakes in the collection are:—*T. swinhonis*, Gthr. (Kosempo), *Calanaria pavimentata*, D. & B. (Kosempo), from which *C. berezowskii*, Gthr., is probably not specifically separable, and *Dipsadomorphus kraepelini*, Stejn. (Kankau, Kosempo).